

(No Model.)

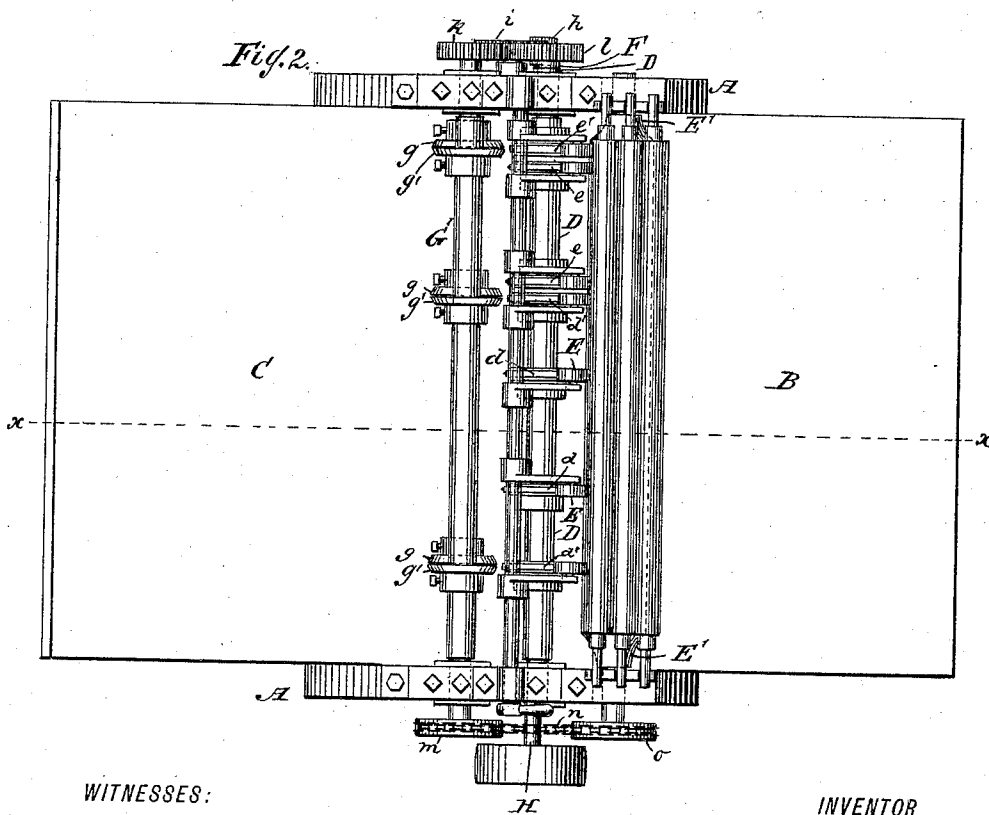
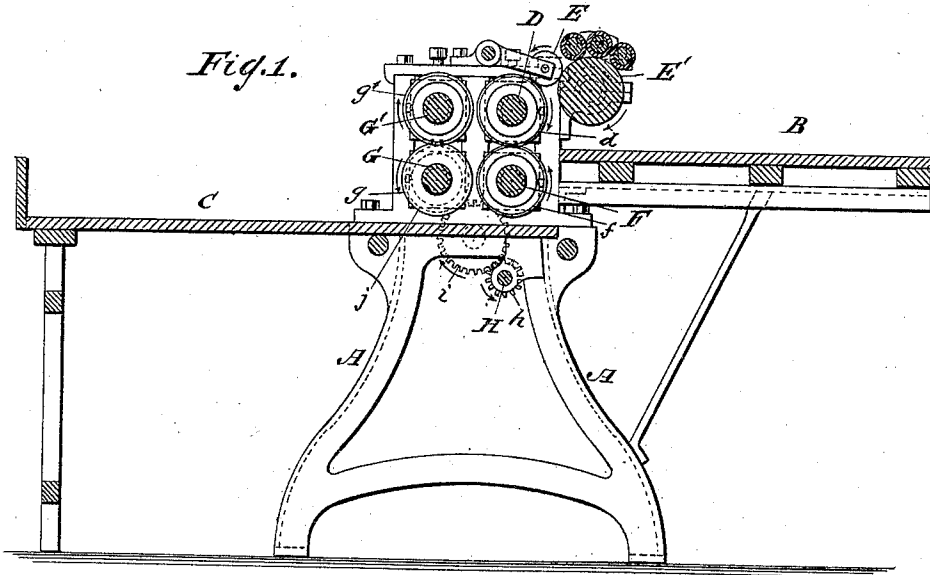
2 Sheets—Sheet 1.

M. MERGONINSKY.

MACHINE FOR CUTTING, CREASING, AND PRINTING PAPER BOX BLANKS.

No. 417,830.

Patented Dec. 24, 1889.



WITNESSES:  
 Edward Wolff.  
 William Miller

INVENTOR  
 Moses Mergoninsky.  
 BY Van Sautwood & Shuff

ATTORNEYS

(No Model.)

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Fig. 3.

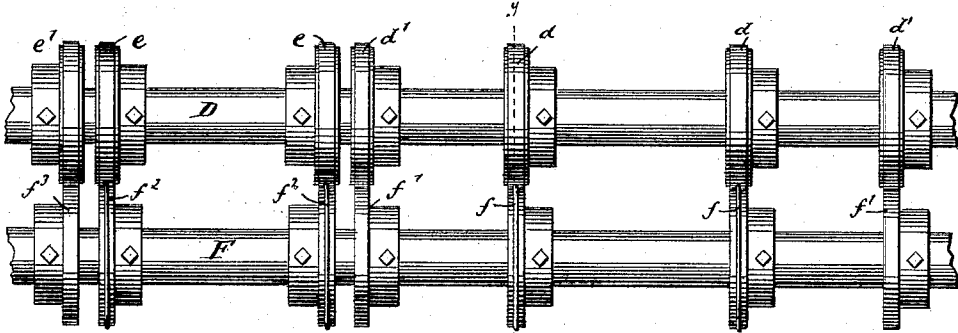


Fig. 4.

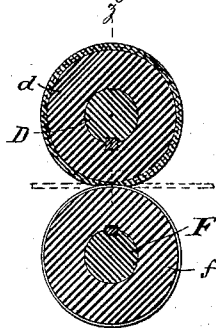


Fig. 5.

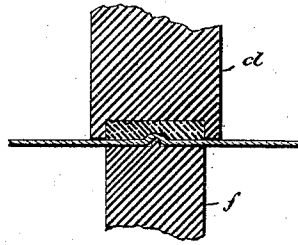


Fig. 6.

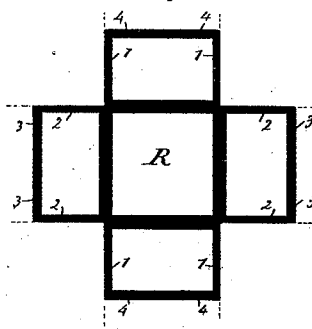


Fig. 8.

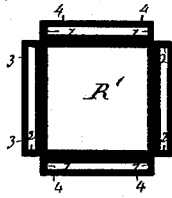
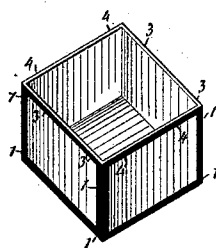


Fig. 7.



WITNESSES:

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BY *Van Cantoord & Hauck*

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# UNITED STATES PATENT OFFICE.

MOSES MERGONINSKY, OF NEW YORK, N. Y., ASSIGNOR TO GUSTAV A. BISLER, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR CUTTING, CREASING, AND PRINTING PAPER-BOX BLANKS.

SPECIFICATION forming part of Letters Patent No. 417,830, dated December 24, 1889.

Application filed October 6, 1887. Serial No. 251,624. (No model.)

To all whom it may concern:

Be it known that I, MOSES MERGONINSKY, a subject of the King of Prussia, residing at New York, in the county and State of New York, have invented new and useful Improvements in the Manufacture of Paper Boxes, of which the following is a specification.

My invention relates to improvements in the manufacture of paper boxes; and it consists in combining with the rolls for creasing and cutting the blank, printing-rolls which are arranged to print borders upon the blank, corresponding in position to the edges and corners of the box and its cover, such borders being an imitation of the binding and fastening strips usually applied to paper boxes, all of which is more fully pointed out in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 represents a vertical section in the plane  $x x$ , Fig. 2, of a machine embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is an elevation of the printing-roll and creasing-roll drawn to a larger scale than the preceding figures. Fig. 4 is a vertical section in the plane  $y y$ , Fig. 3. Fig. 5 is a vertical section in the plane  $z z$ , Fig. 4, drawn on a larger scale than said figure. Fig. 6 is a face view of the finished box-blank, drawn to the same scale as Figs. 1 and 2. Fig. 7 is a perspective view of a finished box. Fig. 8 is a face view of the cover-blank.

Similar letters indicate corresponding parts. In the drawings, referring at present to Figs. 1 and 2, the letter A designates a frame suitably constructed to support the operating parts of the machine. At one end of the same is a feed-table B, and at the opposite end a receiving-table C, as usual.

The machine here illustrated is constructed to crease and print both the box-blank R and the cover-blank R'.

D is a printing-roll having suitable bearings in the sides of the frame A. It is provided with separated printing-surfaces, which are intended to print on the box and cover blanks suitable borders in imitation of the usual binding and fastening strips. As here illustrated, these separated printing-surfaces can be formed by a number of disks  $d d$  and

$d' d'$ , arranged on a shaft, Figs. 3, 4, and 5 especially, which have their faces covered with rubber or other material which will receive ink and distribute it to the blank. The printing-disks  $d d$  are intended to print upon the box-blank R the corner borders marked along the lines 1 1 and 2 2, in Fig. 6, and the disks  $d' d'$  print the edge borders marked along lines 3 3 and 4 4. Similar printing-disks  $e e$  and  $e'$  in combination with the disk  $d'$  perform the same function for the cover-blank R', Fig. 8. Ink is applied to the disks  $d d$ ,  $d' d'$ ,  $e e$ , and  $e'$  by an oscillatory roll E, Figs. 1 and 2, that can be thrown into or out of contact with said disks and with an ink-supply roll E', all as usual in printing-presses.

Beneath the printing-roll D is located a creasing-roll F, having thereon creasing-disks  $f f$ , Figs. 3, 4, and 5, especially arranged to correspond with the inking-disks  $d d$  and  $d' d'$ . The disks  $f f$  are provided with central peripheral knives, which rotate in contact with the printing-disks  $d d$  and form creases in the blank R along the lines 1 1—that is, in the center of the edge borders. The elastic or yielding face of the printing-disks allow the knives to press the paper therein, Fig. 5. Similar creasing-disks  $f^2 f^2$  rotate in contact with the printing-rolls  $e e$  for creasing the cover-blank R. Beneath the printing-disks  $d' d'$  and  $e'$  are smooth disks  $f' f'$ , which only serve to form a support for the blank and to feed the same, and are not provided with creasing-knives. It will be observed that the faces of the creasing-disks or the material on each side of the knives serve as a support for the blank beneath the printing-disks and to feed the same. As the blank is fed forward it comes under the grip of the cutter-rolls G and G', Figs. 1 and 2. These rolls G G' carry cutter-disks  $g$  and  $g'$ , which are arranged to cut the blank to the proper width and sever the covers and box-blanks, such disks being arranged, respectively, in line with the disks  $e'$  and  $d'$ .

A rotary motion can be imparted to the various rolls by any suitable means, such, for instance, as shown in the drawings, Figs. 1 and 2. A driving-shaft H has keyed thereon a gear  $h$ , Fig. 1, which meshes into a gear  $i$ , mounted on a stud secured in the frame A,

which gear in turn engages a gear *j*, keyed to the lower cutter-roll G. This latter gear meshes into a gear *k*, Fig. 2, on the upper cutter-roll G'. The gear *h* on the shaft H also  
 5 engages with a gear *l* on the creasing-roll F. A chain-pulley *m*, Fig. 2, on the upper cutter-shaft is connected by a chain *n* with a pulley *o* on the ink-supply roll E'.

The oscillating ink-roll E is rotated by frictional contact with the ink-supply roll E'.  
 10 The printing-roll D is free to rotate and is rotated by contact with the creasing-roll F. The box or cover blank is first fed through the machine and printed along the lines 1 1  
 15 and 3 3, creased on the lines 1 1, and cut on lines 3 3, as shown in Figs. 6 and 8. The blank is then turned through an angle of ninety degrees and put through again, where it is printed along the lines 2 2 4 4, creased  
 20 on the lines 2 2, and cut on lines 4 4. The material remaining in the corners of the blank is removed by any suitable corner-cutter, and the blank is then folded by hand or otherwise to form a box.

25 It will be observed that all the disks for printing, cutting, and creasing are laterally adjustable on their shafts, so that they can be set for any particular size of box. If the machine were not to be adjustable, solid rolls  
 30 could be used in place of disks. In place of creasing-rolls a scoring-roll could be used.

By the use of my improved machine boxes and their covers can be rapidly and cheaply produced, and the finished box presents a  
 35 neat appearance.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a paper-box-blank machine, the combination, with a printing-roll containing a  
 40 number of separated surfaces for printing borders on the box, of a creasing-roll for creasing the blank, substantially as shown and described.

2. In a paper-box-blank machine, the com-

45 bination, with a printing-roll containing a number of separated surfaces for printing borders on the box, of creasing-disks arranged to crease the blank centrally with certain of the borders, substantially as shown and described.  
 50

3. In a paper-box-blank machine, the combination, with a printing-roll containing a number of separated disks provided with a facing of a yielding material, of disks provided with creasing-knives in contact with the  
 55 said printing-disks, substantially as shown and described.

4. The combination, with the printing-roll containing a number of separated surfaces for printing borders, of creasing-disks ar-  
 60 ranged in line with said disks for creasing the blank, and cutter-rolls, substantially as shown and described.

5. The combination, with the laterally-adjustable printing-disks *d d d'*, of laterally-  
 65 adjustable creasing-disks *f f*, arranged in a line with the printing-disks, substantially as shown and described.

6. In a paper-box-blank machine, the combination of the ink-supply roll, an oscillating  
 70 distributing-roll, the printing-roll having laterally-adjustable printing-disks, and the creasing-roll having laterally-adjustable creasing-disks, all arranged and adapted to operate substantially in the manner and for  
 75 the purpose described.

7. In a paper-box-blank machine, the combination of the printing-disks, the creasing-disks, and the cutting-disks, all laterally adjustable, substantially in the manner and for  
 80 the purpose described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

MOSES MERGONINSKY. [L. s.]

Witnesses:

A. FABER DU FAUR, Jr.,  
 E. F. KASTENHUBER.